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<110> Burn, Joanne E  
Peacock, William J.  
Dennis, Elizabeth S  
Sheldon, Candice C.  
Helliwell, Christopher A.  
Rouse, Dean T.

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<140> 09/857,346

<141> 2001-06-04

<150> PP 7469

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<150> US 60/116,928

<151> 1999-01-22

<150> PCT/AU99/01079

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<170> PatentIn version 3.1

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agcgggtctca ttgagaaagc tcgtcagctt tctgttctct gcgatgcac cgtcgcgctt 180  
ctcgtttgtct cctcctccgg caagctctac agcttctccg ccggtgataa cctgggtcagg 240  
atccttgatc gatatggaaa acagcatgct gatgatctta aagccctgaa tcttcagtca 300  
aaagctctga gctatgggtc acacaatgag ttacttgaac ttgtggatag caagcttgtg 360  
gaatcaaattg tcgggtgggtg aagcgtggac accctcggtc agctggaggg tgccttgaa 420  
aatgccctct ctctaactag agctaggaag acagaactaa tgttgaagct tgttgatagc 480  
ctcaaagaaa aggagaagct gctgaaagaa gagaatcagg ctttggctgg ccagaaggag 540  
aagaagaatc ttgcgggagc cgaagctgat aatatggaga tgtcacctgg acaaactctc 600  
gacatcaatc ttccggtaac tctccactg ctttaattagc caccgttaga cggggctgat 660  
caaattaaaa aatccaaaac atacaactaa ataaataagc tttgttggtt ttcacccttg 720  
aaggggtgcac gttgtatata tcaatactcc cttggctgag agattgtgtg tttactccta 780  
tgttagatat aatgagtaaa ataaaaataa aaagatcttt gtaccttcgt cgagagagaa 840  
ttgtagtgag tgtgcttgtg tgttcttttt ctcttctttg cttcatggcg aagaagccta 900  
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tattaaaaa 969

<210> 9  
<211> 868  
<212> DNA  
<213> Brassica napus

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aagtagccga caagttacct tctctaaacg acgcaacggg ctcacgcaga aagctcgtca 180  
gctttccggt ctctgtgacg catccgtcgc tcttcttgtc gtctccgcct ccgggaaact 240  
ctacagcttc tcctccggtg ataacctggg caagatcctt gatcgatatg gaaagcaaca 300

tgatgatgat cttaaagcct tggatcgtca gtcaaaagct ttggactgtg gttcacacca	360
tgagctactg gaacttgtgg aaagcaagct tgaggaatca aatgtcgata atgtaagtgt	420
gggttccttg gttcagctgg aggaacacct tgagaacgcc ctctccgtaa caagagctag	480
gaagacagaa ctaatgttga agcttgtcga gaaccttaaa gaaaaggaga agttgctgga	540
agaggagaac catgttttgg ctagccagat ggagaagagt aatcttgtgc gagccgaagc	600
tgataatatg gatgtctcac caggacaaat ctccgacatc aatcttccgg taacgctccc	660
actgcttaat tagtcacctt taatcggcga ataaataaaa tccaaaacat ataactaaaa	720
caaacaagat gtgtaattat ccccttgtaa aggggtgtacg ttgtataatc tatactctct	780
ctccggctcg agaggcttcg ggtgtaaaac tatttcagat ttatgtaaga tagaaaatct	840
atgcaagaca ctttcaaact taaaaaaa	868

<210> 10  
 <211> 792  
 <212> DNA  
 <213> Brassica napus

<220>  
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 <222> (619)..(619)  
 <223> n= a, t, g or c

<400> 10	
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gaacaaaagt agccgacaag tcaccttctc caaacgacgc aatgggtctca tcgagaaagc	120
tcgtcagctt tcagttctct gcgatgcac cgtcgctctt ctcgttgtct cagcctccgg	180
caagctttac aacttctccg ccggcgataa cctgggtcaag atccttgatc gatatggaaa	240
acaacatgct gatgatctta agctctgga tcttcagtca aaagctccga agtatggttc	300
acaccatgag ctactagagc ttgtcgaaaag taagcttgtg gaatcaaatt ctgatgtaag	360
cgtcgactcc ctcgttcagc tggaggacca ccttgagact gccctctccg taactagagc	420
taggaagaca gaactaatgt tgaagcttgt tgatagcctc aaagaaaagg agaaattgct	480
gaaagaagag aaccaggggt tggctagcca gatggagaag aataatcttg cgggagccga	540
agctgataaa atggagatgt cacctggaca aatctctgac atcaatcgtc cggttaactct	600
ccgactgctt tattagccnc ctttaagtcca aaacttgtga ctaaaaacaa aaataagtta	660
tcgaactatt cccctataag ggtgaacggt gtatatcttc attctctctg gctgagagac	720

cccgtgtgta aaactatggt tagatttaag taaaaatata tatttaagac atactaaaaa 780  
aaaaaaaaaa aa 792

<210> 11  
<211> 990  
<212> DNA  
<213> Brassica napus

<400> 11  
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aaagctcgtc agctttctgt tctctcgat gcctccgctg cgcttctcgt tgtctcctcc 180  
tccggcaagc tctacagctt ctccgccggt gataacctgg tcaggatcct tgatcgatat 240  
ggaaaacagc atgctgatga tcttaaagcc ctgaatcttc agtcaaaagc tctgagctat 300  
ggttcacaca atgagttact tgaacttggt gatagcaagc ttgtggaatc aaatgtcggg 360  
ggtgtaagcg tggacaccct cgctcagctg gaggggtgtc ttgaaaatgc cctctctcta 420  
actagagcta ggaagacaga actaatgttg aagcttggtg atagcctcaa agaaaaggag 480  
aagctgctga aagaagagaa tcaggctttg gctggccaga aggagaagaa gaatcttgcg 540  
ggagccgaag ctgataatat ggagatgtca cctggacaaa tctccgacat caatcttccg 600  
gtaactctcc cactgcttaa ttagccaccg ttagacgggg ctgatcaaat taaaaaatcc 660  
aaaacataca actaaataaa taagctttgt tgtttttcac ccttgaaggg tgcacgttgt 720  
atatctcaat actcccttgg ctgagagatt gtgtgtttac tcctatgtta gatataatga 780  
gtaaaataaa aataaaaaga tctttgtacc ttcgctcgaga gagaattgta gtgagtgtgc 840  
ttgtgtgttc tttttctctt ctttgcttca tggcgaagaa gcctaccgtc taatttgtaa 900  
cggagacgtg gccctctctg cccttttgta ttcgtaattc ctttgtattt atccacaacg 960  
catagagggt gtcattggtt aaaaaaaaaa 990

<210> 12  
<211> 780  
<212> DNA  
<213> Brassica napus

<220>  
<221> misc\_feature  
<222> (748)..(748)  
<223> n= a, t, g or c

<220>  
<221> misc\_feature  
<222> (769)..(769)  
<223> n= a, t, g or c

<220>  
<221> misc\_feature  
<222> (779)..(779)  
<223> n= a, t, g or c

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cgaattgaga acaaaagtag cgcacaagtc accttctcca aacgacgcaa tggctctcatc 120  
gagaaagctc gtcagctttc agttctctgc gatgcatccg tcgctcttct cgttgtctca 180  
gcctccggca agctttacaa cttctccgcc ggcgataacc tggtaagat ccttgatcga 240  
tatggaaaac aacatgctga tgatcttaaa gctctggatc ttcagtcaaa agctccgaag 300  
tatggttcac accatgagct actagagctt gtcgaaagta agcttggtga atcaaattct 360  
gatgtaagcg tcgactccct cgttcagctg gaggaccacc ttgagactgc cctctccgta 420  
actagagcta ggaagacaga actaatgttg aagcttggtg atagcctcaa agaaaaggag 480  
aaattgctga aagaagagaa ccagggtttg gctagccaga tggagaagaa taatcttgcg 540  
ggagccgaag ctgataaaat ggagatgtca cctggacaaa tctctgacat caatcgccg 600  
gtaactctcc gactgcttta ttagccacct taagtccaaa acttggtgact aaaaacaaaa 660  
ataagttatc gaactattcc cctataaggg tgaacgttgt atatcttcat tctctctggc 720  
tgagagaccc ccgtgtgtaa actatggnta gatttaagta aaatatatnt ttaagacana 780

<210> 13  
<211> 845  
<212> DNA  
<213> Brassica napus

<400> 13  
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agaagccatg gggaggaaga aacttgaaat caagcgaatt gagaacaaaa gtagccgaca 120  
agttaccttc tctaaacgac gcaacggtct catcgagaaa gctcgtcagc tttccgttct 180  
ctgtgacgca tccgtcgctc ttcttgctgt ctccgcctcc gggaaactct acagcttctc 240  
ctccggtgat aacctggtca agatccttga tcgatatgga aagcaacatg atgatgatct 300  
taaagccttg gatcgtcagt caaaagcttt ggactgtggt tcacaccatg agctactgga 360

acttgtggaa agcaagcttg aggaatcaaa tgtcgataat gtaagtgtgg gttccctggt	420
tcagctggag gaacaccttg agaacgccct ctccgtaaca agagctagga agacagaact	480
aatgttgaag cttgtcgaga accttaaaga aaaggagaag ttgctggaag aggagaacca	540
tgttttggct agccagatgg agaagagtaa tcttgtgcga gccgaagctg ataatatgga	600
tgtctcacca ggacaaatct ccgacatcaa tcttccggta acgctcccac tgcttaatta	660
gtcaccttta atcggcgaat aaataaaatc caaaacatat aactaaaaca aacaagatgt	720
gtaattatcc ccttgtaaag ggtgtacgtt gtataatcta tactctctct ccggctcgag	780
aggcttcggg tgtaaaacta tttcagattt atgtaagata gaaaatctat gcaagacact	840
ttcaa	845

<210> 14  
 <211> 825  
 <212> DNA  
 <213> Brassica napus

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gaagccatgg gaagaaagaa actagagatc aagcgaattg agaacaaaag tagccgacaa	120
gtcaccttct ccaaacgacg caatgggtctc atcgagaaag ctgctcagct ttcagttctc	180
tgcgatgcat ccgtcgctct tctcgttgtc tcagcctccg gcaagcttta caacttctcc	240
gccggcgata acctgggtcaa gatccttgat cgatatggaa aacaacatgc tgatgatctt	300
aaagctctgg atcttcagtc aaaagctccg aagtatgggt cacaccatga gctactagag	360
cttgtcgaaa gtaagcttgt ggaatcaaat tctgatgtaa gcgtcgactc cctcgttcag	420
ctggaggacc accttgagac tgccctctcc gtaactagag ctaggaagac agaactaatg	480
ttgaagcttg ttgatagcct caaagaaaag gagaaattgc tgaaagaaga gaaccagggt	540
ttggctagcc agatggagaa gaataatctt gcgggagccg aagctgataa aatggagatg	600
tcacctggac aaatctctga catcaatcgt ccggtaactc tccgactgct ttattagcca	660
ccttaagtcc aaaacttgtg actaaaaaca aaaataagtt atcgaactat tcccctataa	720
gggtgaacgt tgtatatctt cattctctct ggctgagaga ccccggtgtg aaaactatgg	780
ttagatttaa gtaaaaatat atatttaaga cataactaaa aaaaa	825

<210> 15  
 <211> 891

<212> DNA  
<213> Brassica napus

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gaagccatgg ggaggaagaa acttgaaatc aagcgaattg agaacaaaag tagccgacaa 120  
gttaccttct ctaaacgacg caacgggtctc atcgagaaag ctcgtcagct ttccgttctc 180  
tgtgacgcat ccgctgctct tcttgctgctc tccgcctccg ggaaactcta cagcttctcc 240  
tccggtgata acctggtcaa gatccttgat cgatatggaa agcaacatga tgatgatctt 300  
aaagccttgg atcgtcagtc aaaagctttg gactgtgggt cacaccatga gctactggaa 360  
cttgtggaaa gcaagcttga ggaatcaaat gtcgataatg taagtgtggg ttccctgggt 420  
cagctggagg aacaccttga gaacgcctc tccgtaacaa gagctaggaa gacagaacta 480  
atgttgaagc ttgtcgagaa ctttaaagaa aaggagaagt tgctggaaga ggagaaccat 540  
gttttggtta gccagatgga gaagagtaat cttgtgctgag ccgaagctga taatatggat 600  
gtctcaccag gacaaatctc cgacatcaat cttccggtta cgctcccact gcttaattag 660  
tcacctttaa tcggcggaata aataaaatcc aaaacatata actaaaacaa acaagatgtg 720  
taattatccc cttgtaaagg gtgtacgttg tataatctat actctctctc cggctcgaga 780  
ggcttcgggt gtaaaactat ttcagattta tgtaagatag aaaatctatg caagacactt 840  
tcaaactttg taccttgctt tgctgacaga gaattacttc gagctaaaaa a 891

<210> 16  
<211> 196  
<212> PRT  
<213> Brassica napus

<400> 16  
Met Gly Arg Lys Lys Leu Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
1 5 10 15  
Arg Gln Val Thr Phe Ser Lys Arg Arg Asn Gly Leu Ile Glu Lys Ala  
20 25 30  
Arg Gln Leu Ser Val Leu Cys Asp Ala Ser Val Ala Leu Leu Val Val  
35 40 45  
Ser Ala Ser Gly Lys Leu Tyr Asn Phe Ser Ala Gly Asp Asp Leu Val  
50 55 60



Lys Ile Val Asp Arg Tyr Gly Lys Gln His Ala Asp Asp Arg Lys Ala  
65 70 75 80

Leu Asp Leu Gln Ser Glu Ala Pro Lys Tyr Gly Ser His His Glu Leu  
85 90 95

Leu Glu Leu Val Glu Ser Lys Leu Val Glu Ser Asn Ser Asp Val Ser  
100 105 110

Val Asp Ser Leu Val Gln Leu Glu Asn His Leu Glu Thr Ala Leu Ser  
115 120 125

Val Thr Arg Ala Arg Lys Thr Glu Leu Leu Leu Lys Leu Val Asp Ser  
130 135 140

Leu Lys Glu Lys Glu Lys Leu Leu Lys Glu Glu Asn Gln Gly Leu Ala  
145 150 155 160

Ser Gln Met Glu Lys Asn Asn Leu Ala Gly Ala Glu Ala Asp Lys Met  
165 170 175

Glu Val Ser Pro Gly Gln Ile Ser Asp Ile Asn Cys Pro Val Thr Leu  
180 185 190

Pro Leu Leu Tyr  
195

<210> 17  
<211> 196  
<212> PRT  
<213> Brassica napus

<400> 17

Met Gly Arg Lys Lys Leu Glu Ile Lys Arg Ile Glu Lys Asn Ser Ser  
1 5 10 15

Arg Gln Val Thr Phe Cys Lys Arg Arg Asn Gly Leu Ile Glu Lys Ala  
20 25 30

Arg Gln Leu Ser Val Leu Cys Glu Ala Ser Val Gly Leu Leu Val Val  
35 40 45

Ser Ala Ser Asp Lys Leu Tyr Ser Phe Ser Ser Gly Asp Arg Leu Glu

50

55

60

Lys Ile Leu Asp Arg Tyr Gly Lys Lys His Ala Asp Asp Leu Asn Ala  
 65 70 75 80

Leu Asp Leu Gln Ser Lys Ser Leu Asn Tyr Ser Ser His His Glu Leu  
 85 90 95

Leu Glu Leu Val Glu Ser Lys Leu Val Glu Ser Ile Asp Asp Val Ser  
 100 105 110

Val Asp Ser Leu Val Glu Leu Glu Asp His Leu Glu Thr Ala Leu Ser  
 115 120 125

Val Thr Arg Ala Arg Lys Ala Glu Leu Met Leu Lys Leu Val Glu Ser  
 130 135 140

Leu Lys Glu Lys Glu Asn Leu Leu Lys Glu Glu Asn Gln Val Leu Ala  
 145 150 155 160

Ser Gln Ile Glu Lys Lys Asn Leu Glu Gly Ala Glu Ala Asp Asn Ile  
 165 170 175

Glu Met Ser Ser Gly Gln Ile Ser Asp Ile Asn Leu Pro Val Thr Leu  
 180 185 190

Pro Leu Leu Asn  
 195

<210> 18  
 <211> 197  
 <212> PRT  
 <213> Brassica napus

<400> 18

Met Gly Arg Lys Lys Leu Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
 1 5 10 15

Arg Gln Val Thr Phe Ser Lys Arg Arg Ser Gly Leu Ile Glu Lys Ala  
 20 25 30

Arg Gln Leu Ser Val Leu Cys Asp Ala Ser Val Ala Leu Leu Val Val  
 35 40 45

Ser Ser Ser Gly Lys Leu Tyr Ser Phe Ser Ala Gly Asp Asn Leu Val  
50 55 60

Arg Ile Leu Asp Arg Tyr Gly Lys Gln His Ala Asp Asp Leu Lys Ala  
65 70 75 80

Leu Asn Leu Gln Ser Lys Ala Leu Ser Tyr Gly Ser His Asn Glu Leu  
85 90 95

Leu Glu Leu Val Asp Ser Lys Leu Val Glu Ser Asn Val Gly Gly Val  
100 105 110

Ser Val Asp Thr Leu Val Gln Leu Glu Gly Val Leu Glu Asn Ala Leu  
115 120 125

Ser Leu Thr Arg Ala Arg Lys Thr Glu Leu Met Leu Lys Leu Val Asp  
130 135 140

Ser Leu Lys Glu Lys Glu Lys Leu Leu Lys Glu Glu Asn Gln Ala Leu  
145 150 155 160

Ala Gly Gln Lys Glu Lys Lys Asn Leu Ala Gly Ala Glu Ala Asp Asn  
165 170 175

Met Glu Met Ser Pro Gly Gln Ile Ser Asp Ile Asn Leu Pro Val Thr  
180 185 190

Leu Pro Leu Leu Asn  
195

<210> 19  
<211> 197  
<212> PRT  
<213> Brassica napus  
  
<400> 19

Met Gly Arg Lys Lys Leu Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
1 5 10 15

Arg Gln Val Thr Phe Ser Lys Arg Arg Asn Gly Leu Ile Glu Leu Ala  
20 25 30

Arg Gln Leu Ser Val Leu Cys Asp Ala Ser Val Ala Leu Leu Val Val

35

40

45

Ser Ala Ser Gly Lys Leu Tyr Ser Phe Ser Ser Gly Asp Asn Leu Val  
 50 55 60

Lys Ile Leu Asp Arg Tyr Gly Lys Gln His Asp Asp Asp Leu Lys Ala  
 65 70 75 80

Leu Asp Arg Gln Ser Lys Ala Leu Asp Cys Gly Ser His His Glu Leu  
 85 90 95

Leu Glu Leu Val Glu Ser Lys Leu Glu Glu Ser Asn Val Asp Asn Val  
 100 105 110

Ser Val Gly Ser Leu Val Gln Leu Glu Glu His Leu Glu Asn Ala Leu  
 115 120 125

Ser Val Thr Arg Ala Arg Lys Thr Glu Leu Met Leu Lys Leu Val Glu  
 130 135 140

Asn Leu Lys Glu Lys Glu Lys Leu Leu Glu Glu Glu Asn His Val Leu  
 145 150 155 160

Ala Ser Gln Met Glu Lys Ser Asn Leu Val Arg Ala Glu Ala Asp Asn  
 165 170 175

Met Asp Val Ser Pro Gly Gln Ile Ser Asp Ile Asn Leu Pro Val Thr  
 180 185 190

Leu Pro Leu Leu Asn  
 195

<210> 20  
 <211> 196  
 <212> PRT  
 <213> Brassica napus

<400> 20

Met Gly Arg Lys Lys Leu Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
 1 5 10 15

Arg Gln Val Thr Phe Ser Lys Arg Arg Asn Gly Leu Ile Glu Lys Ala  
 20 25 30

Arg Gln Leu Ser Val Leu Cys Asp Ala Ser Val Ala Leu Leu Val Val  
35 40 45

Ser Ala Ser Gly Lys Leu Tyr Asn Phe Ser Ala Gly Asp Asn Leu Val  
50 55 60

Lys Ile Leu Asp Arg Tyr Gly Lys Gln His Ala Asp Asp Leu Lys Ala  
65 70 75 80

Leu Asp Leu Gln Ser Lys Ala Pro Lys Tyr Gly Ser His His Glu Leu  
85 90 95

Leu Glu Leu Val Glu Ser Lys Leu Val Glu Ser Asn Ser Asp Val Ser  
100 105 110

Val Asp Ser Leu Val Gln Leu Glu Asp His Leu Glu Thr Ala Leu Ser  
115 120 125

Val Thr Arg Ala Arg Lys Thr Glu Leu Met Leu Lys Leu Val Asp Ser  
130 135 140

Leu Lys Glu Lys Glu Lys Leu Leu Lys Glu Glu Asn Gln Gly Leu Ala  
145 150 155 160

Ser Gln Met Glu Lys Asn Asn Leu Ala Gly Ala Glu Ala Asp Lys Met  
165 170 175

Glu Met Ser Pro Gly Gln Ile Ser Asp Ile Asn Arg Pro Val Thr Leu  
180 185 190

Arg Leu Leu Tyr  
195

<210> 21  
<211> 197  
<212> PRT  
<213> Brassica napus

<400> 21

Met Gly Arg Lys Lys Leu Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
1 5 10 15

Arg Gln Val Thr Phe Ser Lys Arg Arg Ser Gly Leu Ile Glu Lys Ala

20

25

30

Arg Gln Leu Ser Val Leu Cys Asp Ala Ser Val Ala Leu Leu Val Val  
 35 40 45

Ser Ser Ser Gly Lys Leu Tyr Ser Phe Ser Ala Gly Asp Asn Leu Val  
 50 55 60

Arg Ile Leu Asp Arg Tyr Gly Lys Gln His Ala Asp Asp Leu Lys Ala  
 65 70 75 80

Leu Asn Leu Gln Ser Lys Ala Leu Ser Tyr Gly Ser His Asn Glu Leu  
 85 90 95

Leu Glu Leu Val Asp Ser Lys Leu Val Glu Ser Asn Val Gly Gly Val  
 100 105 110

Ser Val Asp Thr Leu Val Gln Leu Glu Gly Val Leu Glu Asn Ala Leu  
 115 120 125

Ser Leu Thr Arg Ala Arg Lys Thr Glu Leu Met Leu Lys Leu Val Asp  
 130 135 140

Ser Leu Lys Glu Lys Glu Lys Leu Leu Lys Glu Glu Asn Gln Ala Leu  
 145 150 155 160

Ala Gly Gln Lys Glu Lys Lys Asn Leu Ala Gly Ala Glu Ala Asp Asn  
 165 170 175

Met Glu Met Ser Pro Gly Gln Ile Ser Asp Ile Asn Leu Pro Val Thr  
 180 185 190

Leu Pro Leu Leu Asn  
 195

<210> 22  
 <211> 196  
 <212> PRT  
 <213> Brassica napus

<400> 22

Met Gly Arg Lys Lys Leu Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
 1 5 10 15

Arg Gln Val Thr Phe Ser Lys Arg Arg Asn Gly Leu Ile Glu Lys Ala  
20 25 30

Arg Gln Leu Ser Val Leu Cys Asp Ala Ser Val Ala Leu Leu Val Val  
35 40 45

Ser Ala Ser Gly Lys Leu Tyr Asn Phe Ser Ala Gly Asp Asn Leu Val  
50 55 60

Lys Ile Leu Asp Arg Tyr Gly Lys Gln His Ala Asp Asp Leu Lys Ala  
65 70 75 80

Leu Asp Leu Gln Ser Lys Ala Pro Lys Tyr Gly Ser His His Glu Leu  
85 90 95

Leu Glu Leu Val Glu Ser Lys Leu Val Glu Ser Asn Ser Asp Val Ser  
100 105 110

Val Asp Ser Leu Val Gln Leu Glu Asp His Leu Glu Thr Ala Leu Ser  
115 120 125

Val Thr Arg Ala Arg Lys Thr Glu Leu Met Leu Lys Leu Val Asp Ser  
130 135 140

Leu Lys Glu Lys Glu Lys Leu Leu Lys Glu Glu Asn Gln Gly Leu Ala  
145 150 155 160

Ser Gln Met Glu Lys Asn Asn Leu Ala Gly Ala Glu Ala Asp Lys Met  
165 170 175

Glu Met Ser Pro Gly Asn Ile Ser Asp Ile Asn Arg Pro Val Thr Leu  
180 185 190

Arg Leu Leu Tyr  
195

<210> 23  
<211> 197  
<212> PRT  
<213> Brassic napus

<400> 23

Met Gly Arg Lys Lys Leu Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser

1

5

10

15

Arg Gln Val Thr Phe Ser Lys Arg Arg Asn Gly Leu Ile Glu Lys Ala  
 20 25 30

Arg Gln Leu Ser Val Leu Cys Asp Ala Ser Val Ala Leu Leu Val Val  
 35 40 45

Ser Ala Ser Gly Lys Leu Thr Ser Phe Ser Ser Gly Asp Asn Leu Val  
 50 55 60

Lys Ile Leu Asp Arg Tyr Gly Lys Gln His Asp Asp Asp Leu Lys Ala  
 65 70 75 80

Leu Asp Arg Gln Ser Lys Ala Leu Asp Cys Gly Ser His His Glu Leu  
 85 90 95

Leu Glu Glu Val Glu Ser Lys Leu Glu Glu Ser Asn Val Asp Asn Val  
 100 105 110

Ser Val Gly Ser Leu Val Gln Leu Glu Glu His Leu Glu Asn Ala Leu  
 115 120 125

Ser Val Thr Arg Ala Arg Lys Thr Glu Leu Met Leu Lys Leu Val Glu  
 130 135 140

Asn Leu Lys Glu Lys Glu Lys Leu Leu Glu Glu Glu Asn His Val Leu  
 145 150 155 160

Ala Ser Gln Met Glu Lys Ser Asn Leu Val Arg Ala Glu Ala Asp Asn  
 165 170 175

Met Asp Val Ser Pro Gly Gln Ile Ser Asp Ile Asn Leu Pro Val Thr  
 180 185 190

Leu Pro Leu Leu Asn  
 195

<210> 24

<211> 196

<212> PRT

<213> Brassica napus

<400> 24



Met Gly Arg Lys Lys Leu Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
1 5 10 15

Arg Gln Val Thr Phe Ser Lys Arg Arg Asn Gly Leu Ile Glu Lys Ala  
20 25 30

Arg Gln Leu Ser Val Leu Cys Asp Ala Ser Val Ala Leu Leu Val Val  
35 40 45

Ser Ala Ser Gly Lys Leu Tyr Asn Phe Ser Ala Gly Asp Asn Leu Val  
50 55 60

Lys Ile Leu Asp Arg Tyr Gly Lys Gln His Ala Asp Asp Leu Lys Ala  
65 70 75 80

Leu Asp Leu Gln Ser Lys Ala Pro Lys Tyr Gly Ser His His Glu Leu  
85 90 95

Leu Glu Leu Val Glu Ser Lys Leu Val Glu Ser Asn Ser Asp Val Ser  
100 105 110

Val Asp Ser Leu Val Gln Leu Glu Asp His Leu Glu Thr Ala Leu Ser  
115 120 125

Val Thr Arg Ala Arg Lys Thr Glu Leu Met Leu Lys Leu Val Asp Ser  
130 135 140

Leu Lys Glu Lys Glu Lys Leu Leu Lys Glu Glu Asn Gln Gly Leu Ala  
145 150 155 160

Ser Gln Met Glu Lys Asn Asn Leu Ala Gly Ala Glu Ala Asp Lys Met  
165 170 175

Glu Met Ser Pro Gly Gln Ile Ser Asp Ile Asn Arg Pro Val Thr Leu  
180 185 190

Arg Leu Leu Tyr  
195

<210> 25  
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<212> PRT  
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<400> 25

Met Gly Arg Lys Lys Leu Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
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Arg Gln Val Thr Phe Ser Lys Arg Arg Asn Gly Leu Ile Glu Lys Ala  
20 25 30

Arg Gln Leu Ser Val Leu Cys Asp Ala Ser Val Ala Leu Leu Val Val  
35 40 45

Ser Ala Ser Gly Lys Leu Tyr Ser Phe Ser Ser Gly Asp Asn Leu Val  
50 55 60

Lys Ile Leu Asp Arg Tyr Gly Lys Gln His Asp Asp Asp Leu Lys Ala  
65 70 75 80

Leu Asp Arg Gln Ser Lys Ala Leu Asp Cys Gly Ser His His Glu Leu  
85 90 95

Leu Glu Leu Val Glu Ser Lys Leu Glu Glu Ser Asn Val Asp Asn Val  
100 105 110

Ser Val Gly Ser Leu Val Gln Leu Glu Glu His Leu Glu Asn Ala Leu  
115 120 125

Ser Val Thr Arg Ala Arg Lys Thr Glu Leu Met Leu Lys Leu Val Glu  
130 135 140

Asn Leu Lys Glu Lys Glu Lys Leu Leu Glu Glu Glu Asn His Val Leu  
145 150 155 160

Ala Ser Gln Met Glu Lys Ser Asn Leu Val Arg Ala Glu Ala Asp Asn  
165 170 175

Met Asp Val Ser Pro Gly Gln Ile Ser Asp Ile Asn Leu Pro Val Thr  
180 185 190

Leu Pro Leu Leu Asn  
195

<210> 26

<211> 196

<212> PRT  
<213> Arabidopsis thaliana

<400> 26

Met Gly Arg Arg Lys Ile Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
1 5 10 15

Arg Gln Val Thr Phe Ser Lys Arg Arg Asn Gly Leu Ile Asp Lys Ala  
20 25 30

Arg Gln Leu Ser Ile Leu Cys Glu Ser Ser Val Ala Val Val Val Val  
35 40 45

Ser Ala Ser Gly Lys Leu Tyr Asp Ser Ser Ser Gly Asp Asp Ile Ser  
50 55 60

Lys Ile Leu Asp Arg Tyr Glu Ile Gln His Ala Asp Glu Leu Arg Ala  
65 70 75 80

Leu Asp Leu Glu Glu Lys Ile Gln Asn Tyr Leu Pro His Lys Glu Leu  
85 90 95

Leu Glu Thr Val Gln Ser Lys Leu Glu Glu Pro Asn Val Asp Asn Val  
100 105 110

Ser Val Asp Ser Leu Ile Ser Leu Glu Glu Gln Leu Glu Thr Ala Leu  
115 120 125

Ser Val Ser Arg Ala Arg Lys Ala Glu Leu Met Met Glu Tyr Ile Glu  
130 135 140

Ser Leu Lys Glu Lys Glu Lys Leu Leu Arg Glu Glu Asn Gln Val Leu  
145 150 155 160

Ala Ser Gln Met Gly Lys Asn Thr Leu Leu Ala Thr Asp Asp Glu Arg  
165 170 175

Gly Met Phe Pro Gly Ser Ser Ser Gly Asn Lys Ile Pro Glu Thr Leu  
180 185 190

Pro Leu Leu Asn  
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Met Gly Arg Lys Lys Val Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
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Arg Gln Val Thr Phe Ser Lys Arg Arg Asn Gly Leu Ile Glu Lys Ala  
20 25 30

Arg Gln Leu Ser Ile Leu Cys Glu Ser Ser Ile Ala Val Leu Val Val  
35 40 45

Ser Gly Ser Gly Lys Leu Tyr Lys Ser Ala Ser Gly Asp Asn Met Ser  
50 55 60

Lys Ile Leu Asp Arg Tyr Glu Ile His His Ala Asp Glu Leu Glu Ala  
65 70 75 80

Leu Asp Leu Ala Glu Lys Thr Arg Asn Tyr Leu Pro Leu Lys Glu Leu  
85 90 95

Leu Glu Ile Val Gln Ser Lys Leu Glu Glu Ser Asn Val Asp Asn Ala  
100 105 110

Ser Val Asp Thr Leu Ile Ser Leu Glu Glu Gln Leu Glu Thr Ala Leu  
115 120 125

Ser Val Thr Arg Ala Arg Lys Thr Glu Leu Met Met Gly Glu Val Lys  
130 135 140

Ser Leu Gln Lys Thr Glu Asn Leu Leu Arg Glu Glu Asn Gln Thr Leu  
145 150 155 160

Ala Ser Gln Val Gly Lys Lys Thr Phe Leu Val Ile Glu Gly Asp Arg  
165 170 175

Gly Met Ser Trp Glu Asn Gly Ser Gly Asn Lys Val Arg Glu Thr Leu  
180 185 190

Pro Leu Leu Lys  
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<210> 28  
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<400> 28

Met Gly Arg Arg Lys Val Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
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Arg Gln Val Thr Phe Ser Lys Arg Arg Lys Gly Leu Ile Glu Lys Ala  
20 25 30

Arg Gln Leu Ser Ile Leu Cys Glu Ser Ser Ile Ala Val Val Ala Val  
35 40 45

Ser Gly Ser Gly Lys Leu Tyr Asp Ser Ala Ser Gly Asp Asn Met Ser  
50 55 60

Lys Ile Leu Asp Arg Tyr Glu Ile His His Ala Asp Glu Leu Lys Ala  
65 70 75 80

Leu Asp Leu Ala Glu Lys Ile Arg Asn Tyr Leu Pro His Lys Glu Leu  
85 90 95

Leu Glu Ile Val Gln Ser Lys Leu Glu Glu Ser Asn Val Asp Asn Val  
100 105 110

Ser Val Asp Ser Leu Ile Ser Met Glu Glu Gln Leu Glu Thr Ala Leu  
115 120 125

Ser Val Ile Arg Ala Lys Lys Thr Glu Leu Met Met Glu Asp Met Lys  
130 135 140

Ser Leu Gln Glu Arg Glu Lys Leu Leu Ile Glu Glu Asn Gln Ile Leu  
145 150 155 160

Ala Ser Gln Val Gly Lys Lys Thr Phe Leu Val Ile Glu Gly Asp Arg  
165 170 175

Gly Met Ser Arg Glu Asn Gly Ser Gly Asn Leu Val Pro Glu Thr Leu  
180 185 190

Ser Leu Leu Lys  
195

<210> 29  
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Met Gly Arg Arg Lys Val Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
1 5 10 15

Arg Gln Val Thr Phe Cys Lys Arg Arg Asn Gly Leu Met Glu Lys Ala  
20 25 30

Arg Gln Leu Ser Ile Leu Cys Glu Ser Ser Val Ala Leu Ile Ile Ile  
35 40 45

Ser Ala Thr Gly Arg Leu Tyr Ser Phe Ser Ser Gly Asp Ser Met Ala  
50 55 60

Lys Ile Leu Ser Arg Tyr Glu Leu Glu Gln Ala Asp Asp Leu Lys Thr  
65 70 75 80

Leu Asp Leu Glu Glu Lys Thr Leu Asn Tyr Leu Ser His Lys Glu Leu  
85 90 95

Leu Glu Thr Ile Gln Cys Lys Ile Glu Glu Ala Lys Ser Asp Asn Val  
100 105 110

Ser Ile Asp Cys Leu Lys Ser Leu Glu Glu Gln Leu Lys Thr Ala Leu  
115 120 125

Ser Val Thr Arg Ala Arg Lys Thr Glu Leu Met Met Glu Leu Val Lys  
130 135 140

Thr His Gln Glu Lys Glu Lys Leu Leu Arg Glu Glu Asn Gln Ser Leu  
145 150 155 160

Thr Asn Gln Leu Ile Lys Met Gly Lys Met Lys Lys Ser Val Glu Ala  
165 170 175

Glu Asp Ala Arg Ala Met Ser Pro Glu Ser Ser Ser Asp Asn Lys Pro  
180 185 190

Pro Glu Thr Leu Leu Leu Leu Lys  
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Met Gly Arg Arg Arg Val Glu Ile Lys Arg Ile Glu Asn Lys Ser Ser  
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Arg Gln Val Thr Phe Cys Lys Arg Arg Asn Gly Leu Met Glu Lys Ala  
20 25 30

Arg Gln Leu Ser Ile Leu Cys Gly Ser Ser Val Ala Leu Phe Ile Val  
35 40 45

Ser Ser Thr Gly Lys Leu Tyr Asn Ser Ser Ser Gly Asp Ser Met Ala  
50 55 60

Lys Ile Leu Ser Arg Phe Lys Ile Gln Gln Ala Asp Asp Pro Glu Thr  
65 70 75 80

Leu Asp Leu Glu Asp Lys Thr Gln Asp Tyr Leu Ser His Lys Glu Leu  
85 90 95

Leu Glu Ile Val Gln Arg Lys Ile Glu Glu Ala Lys Gly Asp Asn Val  
100 105 110

Ser Ile Glu Ser Leu Ile Ser Met Glu Glu Gln Leu Lys Ser Ala Leu  
115 120 125

Ser Val Ile Arg Ala Arg Lys Thr Glu Leu Leu Met Glu Leu Val Lys  
130 135 140

Asn Leu Gln Asp Lys Glu Lys Leu Leu Lys Glu Lys Asn Lys Val Leu  
145 150 155 160

Ala Ser Glu Val Gly Lys Leu Lys Lys Ile Leu Glu Thr Gly Asp Glu  
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Arg Ala Val Met Ser Pro Glu Asn Ser Ser Gly His Ser Pro Pro Glu  
 180 185 190

Thr Leu Pro Leu Leu Lys  
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<210> 33  
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<220>  
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<400> 33  
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34

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